

REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow. Applicant respectfully requests that the foregoing amendments be entered at least because they raise no new issues requiring further search or consideration, and because they place the application in condition for allowance.

Claim 4 has been canceled without prejudice or disclaimer. Claims 1 and 34 are currently being amended. Support for the amendment to claims 1 and 34, can be found at least in original claim 4.

This amendment changes and deletes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

After amending the claims as set forth above, claims 1-3 and 5-35 are now pending in this application.

Drawings

The Office Action indicated that the formal drawing sheet of Figures 11A-11G, in which the drawing Figure 11D was amended, was not submitted. Applicant resubmits herewith the formal drawing sheet of Figures 11A-11G, in which the drawing Figure 11D was amended. Accordingly, any objection to the claims has been overcome.

Allowable subject matter

Applicant appreciates the indication that claims 6-8, 10-16, 20-22, 28, 29 and 31-33 contain allowable subject matter. Applicant has not amended these claims to be in independent form, because as further discussed below, the independent claims from which these claims depend are allowable.

Rejections under 35 U.S.C. §§ 102 and 103

Claims 1, 27, 30 and 34 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,722,125 to Pfalzgraf ("Pfalzgraf"). Claim 5 is rejected under 35 U.S.C. §

103(a) as being unpatentable over Pfalzgraf in view of JP 2001-271685 to Yoichi ("Yoichi"). Claims 4, 9, 17-19, 23-26 and 35 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Pfalzgraf in view of U.S. Patent No. 5,974,792 to Isobe ("Isobe"). Applicant respectfully traverses these rejections for at least the following reasons.

Independent claim 1 is directed to an exhaust purification apparatus which comprises a "a controller that executes a poisoning release control of the exhaust gas purification catalyst when a predetermined condition is established, the poisoning release control including a normal mode and an exhaust gas composition mode before the normal mode, a manipulation parameter of the engine related to an exhaust gas composition being manipulated in such a manner that a hydrogen concentration in the exhaust gas flowing into the exhaust gas purification catalyst in the exhaust gas composition mode is higher than that in the normal mode, and wherein, in the exhaust gas composition mode, an ignition timing is set more toward an advance angle direction than in the normal mode." Thus, in claim 1, the ignition timing is set more toward an advance angle direction in the exhaust gas composition mode than in the normal mode. The Office Action, on page 4, acknowledges that Pfalzgraf "fails to disclose that an ignition timing in the exhaust composition mode is set toward a more advance angle direction than that in the normal mode" but relies on Isobe at col. 20, lines 4-8 for curing the deficiencies of Pfalzgraf.

Even if Pfalzgraf and Isobe were combined, however, the combination would not suggest the features of claim 1. Isobe discloses injection dither control where the exhaust gas temperature is raised by delaying (retarding) the timing to warm up the catalyst (col. 20, lines 1-4), and when the injection dither is shifted to the rich side, the ignition timing is retarded to suppress engine torque variation (col. 20, lines 4-8). Thus, Isobe suggests correction by retarding the ignition timing, and thus correction by setting the timing more toward the retarding angle direction. This procedure of Isobe is contrary to the recitation in claim 1 where the ignition timing is set more toward an advance angle direction in the exhaust composition mode than in the normal mode. Thus, even if Pfalzgraf and Isobe were combined, the combination would not suggest the features of claim 1.

Independent claims 17, 34 and 35, respective recite “a controller that executes a poisoning release control of the exhaust gas purification catalyst when a predetermined condition is established, the poisoning release control including a normal mode and an exhaust gas composition mode before the normal mode, an ignition timing in the exhaust gas composition mode being set more toward an advance angle direction than in the normal mode”, “manipulating a manipulation parameter of the engine related to an exhaust gas composition in such a manner that a hydrogen concentration in the exhaust gas flowing into the exhaust gas purification catalyst in the exhaust gas composition mode is higher than that in the normal mode, and wherein, in the exhaust gas composition mode, an ignition timing is set more toward an advance angle direction than in the normal mode” and “executing a poisoning release control of the exhaust gas purification catalyst when a predetermined condition is established, the poisoning release control including a normal mode and an exhaust gas composition mode before the normal mode; and setting an ignition timing in the exhaust gas composition mode more toward an advance angle direction than in the normal mode.” Thus, independent claims 17, 34 and 35 are patentable for analogous reasons to claim 1.

The dependent claims are patentable for at least the same reasons as their respective independent claims, as well as for further patentable features recited therein.

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of

papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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Amendments to the Drawings:

The drawing sheet attached in connection with the above-identified application containing Figures 11A-11G is being presented as a new formal drawing sheet to be substituted for the previously submitted drawing sheets. The drawing Figures 11D has been amended. Appended to this amendment is an annotated copy of the previous drawing sheet which has been marked to show changes presented in the replacement sheet of the drawing.

Figure 11D has been amended to correct the air-fuel ratio in the exhaust gas composition mode region. Support for this change can be found in the specification paragraph [0068].

